UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

NEW JERSEY CARPENTERS HEALTH FUND, on Behalf of Themselves and All Others Similarly Situated,	))))	
	)	08 Civ. 5653 (PAC)
Plaintiff,	)))	
v.	))	
DLJ MORTGAGE CAPITAL, INC., CREDIT SUISSE MANAGEMENT, LLC f/k/a CREDIT SUISSE FIRST BOSTON MORTGAGE SECURITIES CORPORATION, ANDREW A. KIMURA, THOMAS ZINGALLI, JEFFREY A. ALTABEF, MICHAEL A. MARRIOT, EVELYN ECHEVARRIA and CREDIT SUISSE SECURITIES (USA), LLC,	))))))))))	
Defendants.	))	

DECLARATION OF MICHAEL L. HARTZMARK, PH.D.
IN SUPPORT OF PLAN OF ALLOCATION

I, Michael L. Hartzmark, Ph.D. declare:

I.   Background and Qualifications

1.   I am President of Hartzmark Economics Litigation Practice LLC and prior to this I was a Principal and Director at Navigant Economics (formerly doing business as Chicago Partners, LLC, a subsidiary of Navigant Consulting, Inc.).   Both firms specialize in the application of economics and finance to legal, commercial and regulatory issues, including issues such as those addressed in this Declaration.   In my prior and current engagements related to residential mortgage-backed securities (RMBS), I have been asked to build and analyze large transaction databases, and/or to use loan performance metrics to calculate damages for more than 300 trusts.   In addition, I have submitted expert reports in a number of RMBS and other asset-backed securities class action matters, including *Maine State Retirement System v. Countrywide Financial, et al.* in the U.S. District Court for the Central District of California; *Policeman's Annuity and Benefit Fund of the City of Chicago, et al v. Bank of America and U.S. Bank National Association* in the U.S. District Court for the Southern District of New York; *New Jersey Carpenters Health Fund, et al v. Residential Capital, LLC* in the U.S. District Court for the Southern District of New York; *New Jersey Carpenters Health Fund, et al v. DLJ Mortgage Capital, Inc., Credit Suisse Management, et al*. in the U.S. District Court for the Southern District of New York; *In Re Dynex Securities Litigation* in the U.S. District Court for the Southern District of New York; *In Re DVI, Inc. Securities Litigation* in the U.S. District Court for the Eastern District of Pennsylvania; *In Re MF Global Holdings Limited Securities Litigation* in the U.S. District Court for the Southern District of New York; *New Jersey Carpenters Vacation Fund, et al. v. The Royal Bank of Scotland Group, plc.* in the U.S. District Court for the Southern District of New York; and *Oklahoma Police Pension & Retirement System v. U.S. Bank*

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National Association in the U.S. District Court for the Southern District of New York; *David M. Loritz, et al. v. Exide Technologies, et al*. in the U.S. District Court for the Central District of California; and *New Jersey Carpenters Health Fund, et al v. Novastar Mortgage, Inc., et al.* in the U.S. District Court for the Southern District of New York. Recently I was also engaged as an independent contractor by the Office of the Attorney General of the State of New York to assist in its investigation of the RMBS market.

2.   I earned my B.A. degree in economics from the University of Michigan and my M.A. and Ph.D. degrees in economics from the University of Chicago. I have taught economics and financial economics in the Department of Economics at the University of Chicago and jointly in the Michigan Business School (now the Ross School of Business) and the Department of Economics at the University of Michigan.

3.   At the University of Michigan I created and taught courses on financial and commodity futures markets. While an Assistant Professor at the University of Michigan I received a research grant from the University of Chicago Center for the Study of Futures Prices, as well as the John M. Olin Faculty Fellowship to further my research in financial markets. In addition, I published articles in peer-reviewed journals related to derivative financial markets. Prior to my tenure track appointment at the University of Michigan, I was employed as a Financial Economist at the Commodity Futures Trading Commission, Division of Economics and Education.

4.   I have been a holder of the Series 7 and 63 registered representative licenses and have served as a Financial Advisor at Fahnestock & Co., Inc. (now Oppenheimer & Co., Inc.). I was also founder and President of DARMA, LLC, a wealth and asset advisory company affiliated with Oppenheimer & Co., Inc.

5.   I have served as a testifying or consulting expert in numerous securities class action matters. I have spent much of my time as an economic consultant evaluating issues related to securities class action certification, primarily in financial markets other than those for common stocks. My primary focus has been on such securities as corporate bonds, Treasury futures, and asset-backed securities, including mortgage-backed securities. I wrote a series of reports cited in a federal district court's opinion granting class certification in *In re DVI, Inc. Sec. Litig.,* 249 F.R.D. 196, 209 (E.D. Pa. 2008), which was subsequently affirmed by the Third Circuit, *In re DVI, Inc. Sec. Litig.,* 639 F.3d 623 (3d Cir. 2011). I have co-authored three Business Law Review publications discussing the commonly used empirical tests employed in securities class action matters, with a special focus on securities other than common stock.[1]

6.   My qualifications, publications, and expert engagements are summarized in greater detail in my *curriculum vitae*, a copy of which is attached to this Declaration.

II.   Scope of Engagement

7.   I have been asked by counsel for Lead Plaintiff to examine the proposed plan to allocate the net settlement proceeds in this matter among the settlement Class Members who submit valid and timely claim forms (the "Plan of Allocation" or the "Plan"). The Plan of Allocation is set forth in Appendix A to the Notice.[2]

III.   Basis for Recognized Claim Calculation

8.   The objective of the Plan of Allocation is to distribute equitably the Net

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[1]   "Fraud on the Market: Analysis of the Efficiency of the Corporate Bond Market." (With Cindy A. Schipani and H. Nejat Seyhun), *Columbia Business Law Review*, Volume 2011, Number 3. "The Curious Incident of the Dog that Didn't Bark and Establishing Cause-and-Effect in Class Action Securities Litigation." (With H. Nejat Seyhun), *Virginia Law & Business Review*, Volume 6, Number 3, 2012. "Understanding the Efficiency of the Market for Preferred Stock." (With H. Nejat Seyhun), *Virginia Law & Business Review*, 8, 149-230 (Spring 2014).

[2]   Notice of: Pendency of Class Action, Preliminary Approval Order and Proposed Settlement, Settlement Fairness Hearing and Motion for Attorneys' Fees and Reimbursement of Litigation Expenses (the "Notice").

Settlement Fund to those Class Members who suffered economic losses as a result of the alleged misrepresentations and omissions.   In this case, Lead Plaintiff alleges that the offering documents for four Home Equity Mortgage Trust (HEMT) Trusts (the "Offerings") contained material misstatements and omissions.[3]

9.   The Plan of Allocation is based on two elements. The first element is the formula set forth in Section 11 of the Securities Act. Section 11 concerns liability for material misstatements and omissions in registration statements and their accompanying prospectuses and prospectus supplements as filed with the U.S. Securities and Exchange Commission ("SEC"). Under Section 11, losses are calculated as the "difference between the amount paid for the security (not exceeding the price at which the security was offered to the public) and (1) the value thereof as of the time such suit was brought, or (2) the price at which such security shall have been disposed of in the market before suit, or (3) the price at which such security shall have been disposed of after suit but before judgment if such damages shall be less than the damages representing the difference between the amount paid for the security (not exceeding the price at which the security was offered to the public) and the value thereof as of the time such suit was brought …"[4]

10.   Second, once the calculation of losses is completed based on the formula set forth in Section 11 of the Securities Act, the Plan distinguishes between two groups of investors. Settlement Group 1 (the "Certified Claimants") will be composed of those members of the Settlement Class who purchased or otherwise acquired Certificates issued by any of the following two (2) HEMT Trusts — HEMT Series 2006-5 and HEMT Series 2007-2. Settlement

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[3]   The Offerings with their constituent certificates constituting the Settlement Certificates were issued by the four (4) HEMT Trusts: Series 2006-4 ("HEMT 2006-4"), Series 2006-5 ("HEMT 2006-5"), Series 2006-6 ("HEMT 2006-6"), and Series 2007-2 ("HEMT 2007-2").

[4]   Securities Act of 1933, Section 11(e).

Group 2 (the "Non-Certified Claimants") will be composed of those members of the Settlement Class who purchased or otherwise acquired Certificates issued by any of the following two (2) HEMT Trusts — HEMT Series 2006-4 and HEMT Series 2006-6.   These two groups are described in the Plan.

IV.   Plan of Allocation – Recognized Claim

11.   A Claimant's share, if any, of the Net Settlement Fund will depend on several considerations, including: (i) the aggregate value of the "Recognized Claims" represented by valid Claim Forms that Class Members submit to the Claims Administrator, relative to the Net Settlement Fund; (2) the Claimant's Recognized Claim as calculated under the Plan of Allocation; and (3) whether the Claimant is in Settlement Group 1 or Settlement Group 2.[5]

12.   A Claimant's Recognized Claim is the sum of all that Claimant's Net Recognized Losses for all of its purchases of the Certificates, which will depend on several considerations, including: (a) the face value of the Certificates purchased; (b) when the Certificates were purchased or acquired and the price paid; (c) any principal payments received; (d) whether the Certificates were sold, and if so, when the Certificates were sold and the price received; and/or (e) if held on the applicable Date of Suit for the Certificates, the price of the Certificates on that date.[6]

13.   I understand that the Claims Administrator will calculate a Recognized Loss Amount or Recognized Gain Amount for each purchase or acquisition of a Certificate by a Claimant as supported by a valid Claim Form. The specific formula for calculating the

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[5]   A Claimant may have "Recognized Claims" under more than one Group and under both Settlement Groups.

[6]   The applicable Date of First Suit is June 3, 2008 for the Certificates issued by the HEMT Series 2006-5 trust and March 23, 2009 for the Certificates issued by the HEMT Series 2006-4, HEMT Series 2006-6, and HEMT 2007-2 trusts.

Recognized Loss Amount or Recognized Gain Amount, and the related Net Recognized Losses, is set forth in paragraphs 63 through 71 of the Plan. The formula is consistent with the calculation of losses embodied in Section 11 of the Securities Act. Although the formula is necessarily complicated due to the complex nature of mortgage-backed securities and the statutory damage calculations mandated by Section 11 of the Securities Act, I note that investors of mortgage-backed securities are typically highly sophisticated investors, and the language utilized in the Plan is consistent with industry terminology.

14.   In general, the calculation requires a four-step process, including: (1) calculation of the Purchase Amount; (2) calculation of the Cumulative Principal Distributions received by the investor between the dates of purchase and sale (or, if still held as of the applicable Date of Suit, the calculation of the Cumulative Principal Distributions between the dates of purchase and the Date of the First Suit); (3) calculation of the Sales Proceeds (or, if still held as of the applicable Date of Suit, the value on the Date of the First Suit); and (4) calculation of the Recognized Loss Amount or Recognized Gain Amount using the values determined in the first three steps.

15.   As explained in the Notice, one of the parameters used to calculate the Recognized Loss Amount or Recognized Gain Amount is called the "Mortgage Factor." By way of background, the Certificates generally entitle borrowers to principal and interest payments derived from the underlying mortgages. Subsequent to the offering of a Certificate, the principal balance outstanding on a particular class of mortgage-backed securities may be reduced as borrowers make principal payments on their mortgage loans, prepay their loans either in whole or in part, or alternatively, borrowers stop meeting their payment obligations resulting in losses to the Trust. The Plan of Allocation takes into consideration such changes in a Certificate's

"Mortgage Factor," which is that percentage of the Original Principal Balance remaining on each Certificate as of each date between the Certificate's initial offering and each monthly distribution.   The Plan of Allocation also takes into consideration changes in a Certificate's "Distribution Factor," which is that percentage of the Original Principal Balance on each Certificate as of each date between the Certificate's initial offering and each monthly distribution reflecting only actual Cumulative Principal Distributions received by the investor.[7] *See* Plan at ¶ 65.

16.   The monthly Mortgage Factors and Distribution Factors for each of the Certificates are listed on the settlement website, www.HEMTMBSSettlement.com. In addition, the Notice describes two other parameters required to calculate the Recognized Loss Amount or Recognized Gain Amount.   These are the Date of First Suit and the value at applicable date of First Suit. Both of these parameters are also listed for each Certificate on the settlement website, www.HEMTMBSLitigation.com.

17.   For the value at applicable date of First Suit, one of four valuation sources were used.   If actual transaction prices were available they were used to calculate the value at applicable date of First Suit.[8]   When transaction prices were not available at applicable date of

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[7]   As such, the Distribution Factor specifically excludes reductions to the Original Aggregate Principal Balance that are the result of losses borne by Certificate holders (i.e., principal amounts that will not be paid back due to realized losses on the underlying loans). The Distribution Factor is a measure of Cumulative Principal Distributions actually received by the Certificate holders. The Certificate's Mortgage Factor combines reductions to the Original Aggregate Principal Balance that are the result of both realized losses and principal distributions.

[8]   Trade data is not publicly available for private-label, non-agency mortgage-backed securities such as the certificates issued by the four HEMT Trusts.   Therefore, Lead Plaintiff subpoenaed various market makers, custodians, government-sponsored entities, and fund managers for the production of data regarding prices and trading activity in the HEMT 2006-5 and HEMT 2007-2 Certificates.   Because data was available, a value-weighted transaction price was calculated for the HEMT 2006-5-A1 Certificates based on transactions between May 25, 2008 and June 24, 2008 (the dates of the distribution of the monthly remittance reports surrounding the applicable date of First Suit.

First Suit, then IDC[9] and Bloomberg[10] price data was used. Finally, if neither IDC nor

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[9]   IDC data was obtained through S&P Capital IQ. "S&P Capital IQ, a business unit of McGraw Hill Financial (NYSE:MHFI), is a leading provider of multi-asset class data, research and analytics to institutional investors, investment advisors and wealth managers around the world. We provide a broad suite of capabilities designed to help track performance, generate alpha, identify new trading and investment ideas, and perform risk analysis and mitigation strategies." This web-based platform offers information on both public and private capital markets for various tasks including company research, company/transactions screenings, retrieval of historical data, valuation, and more. Capital IQ, Press Release dated June 2, 2015 available at http://www.spcapitaliq.com/our-thinking/newsroom/s-p-capital-iq-expands-apac-third-party-sell-side-and-credit-ratings-research-on-its-desktop (last visited on June 9, 2015).

IDC describes itself as: We are a leading provider of financial market data, analytics and related solutions. Thousands of financial institutions, as well as hundreds of software and service providers subscribe to our services. We are one of the world's largest providers of financial data, serving the mutual fund, bank, asset management, hedge fund, securities and financial instrument processing and administration sectors. We distribute our financial data and related offerings directly to customers and indirectly through value-added resellers ("VARs"), including software providers, processors and custodians….

Pricing and Reference Data: Our Pricing and Reference Data segment provides an extensive range of financial market data services and analytics to thousands of customers worldwide including banks, brokerage firms, mutual fund companies, exchange traded fund ("ETF") sponsors, hedge funds, pension funds, insurance companies and asset management firms. In addition, our offerings are also used by financial information providers, information media companies, and VARs such as software providers, processors, custodians and other outsourcing organizations. The Pricing and Reference Data segment has three primary offerings: (1) evaluated pricing services, which are daily opinions of value, on approximately 2.7 million fixed income securities, international equities and other hard-to-value financial instruments; (2) reference data, which encompasses listed markets pricing and descriptive information covering over 10 million global financial instruments for use across the securities and financial instrument processing lifecycle; and (3) fixed income portfolio analytics and fixed income data to help manage risks and analyze the sources of investment risk and return.

Source: Interactive Data Corporation, Form 10-K: Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2013 (S.E.C. Mar. 13, 2014). On July 29, 2010, Interactive Data Corporation ("we" or "us") was acquired in a merger (the "Merger") by investment funds managed by Silver Lake Group, LLC and Warburg Pincus LLC (the "Sponsors"). As of June 30, 2013, there was no established public trading market for any of the common stock of the registrant. Therefore, this was IDC's most recently filed SEC Form 10-K.

[10]   Bloomberg data was obtained through Bloomberg Data Services. The Bloomberg Valuation Service (BVAL) provides transparent evaluated price information for a variety of financial instruments, including GSAC sector bonds (Government, Supranational, Agency, and Corporate), mortgage backed securities, municipal bonds, and over-the-counter derivatives.

Bloomberg's evaluated pricing service, BVAL, provides accurate and defensible pricing of fixed income and derivatives instruments for mutual funds, money managers, hedge funds, internal pricing groups, auditors, and regulators. Whether the priority is quality, coverage or independence, BVAL consistently augments transparency with high-quality data for the front, middle and back office via the Bloomberg Professional® service and an enterprise feed.

BVAL draws on Bloomberg's industry leading reference data and yield calculators to price more than 2.5 million securities daily. Utilizing only the highest quality market contributors—including TRACE, MSRB, exchanges and broker quotes—this pricing data is further filtered, cleansed and verified for ongoing quality and consistency. The entire process is overseen by capital market experts who monitor the final pricing result and provide exceptional customer service. BVAL provides extensive coverage for fixed income and derivatives instruments. Source: http://www.bloomberg.com/enterprise/content-data/pricing-data/.

Bloomberg, the global business and financial information and news leader, gives influential decision makers a critical edge by connecting them to a dynamic network of information, people and ideas. The company's strength –

Bloomberg reported prices at applicable date of First Suit, then a third-party pricing service, Five

Bridges Advisors LLC was engaged to calculate the prices at applicable date of First Suit.[11]

18.   For those thirty-one (31) Certificates which at the applicable Date of First Suit

had cumulative realized losses equal to the original principal balances (*i.e.,* the principal balances

were zero at the applicable Date of First Suit) the price at the applicable Date of First Suit was

set to zero. For thirteen (13) Certificates in the HEMT 2006-4, HEMT 2006-6 and HEMT 2007-

2 trusts there were no transaction prices at the applicable Date of First Suit, thus either IDC or

Bloomberg prices were used. For the HEMT 2006-5-A1 Certificate, transaction prices at the

applicable Date of First Suit were used. For the other four (4) HEMT 2006-5 Certificates, prices

at the applicable Date of First Suit were calculated estimated by Five Bridges.

19.   Finally, the Recognized Loss Amounts of all investors in each individual

Certificate will be separately aggregated for each of the two Settlement Groups specified in the

Plan. The Plan calls for the distribution of that group's Net Settlement Funds as specified in the

Notice at ¶ 71 to investors based on the investor's pro-rata share of the aggregate Recognized

Loss Amount for that Settlement Group. In other words, each investor in each Certificate will be

paid the Recognized Claim divided by the total of all Recognized Claims to be paid for the

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delivering data, news and analytics through innovative technology, quickly and accurately – is at the core of the Bloomberg Professional service, which provides real-time financial information to more than 320,000 subscribers globally. Source: http://www.bloomberg.com/enterprise/about/

[11]   Five Bridges Advisors LLC describes itself as a leading provider of mortgage analytics and advisory services to various market participants including asset managers, originators, servicers, investors and government entities. Five Bridges has developed and maintains a proprietary analytics and valuation system called Javelin. Javelin is supported by a data warehouse of more than 800,000,000 monthly remittance records representing the performance time series of more than 25 million loans which in turn are linked to more than 173,000 Non-Agency RMBS classes. Five Bridges collects structural information, asset-specific performance and price data, and receives market research and data. Additionally, their data warehouse contains decades of economic data at multiple various levels of geographic granularity. Finally, Five Bridges interacts regularly with market participants, and in late 2007 implemented a process to aggregate and catalogue market transactional information on Non-Agency RMBS in support of their analytics. The company's valuation team averages 15 years of experience in the capital markets in risk management, sales/trading, structuring, asset management and research. Source: Five Bridges Description of Retro-Valuation Services.

Settlement Group, and multiplied by the total amount in the Net Settlement Fund for the Settlement Group.
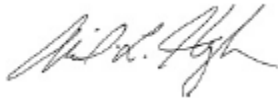
V.   The Plan of Allocation Is Fair and Reasonable

20.   With respect to calculating Recognized Claims, it is my opinion that from a financial perspective, the Plan of Allocation as described in the Notice treats Claimants equitably, when taken as a whole, and in a manner reasonably consistent with my understanding of recoverable losses under Section 11 of the Securities Act as a result of the alleged misstatements and omissions.

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17.   I declare, under penalty of perjury, that the foregoing facts are true and correct.

Executed this 21 day of December, 2015

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Michael L. Hartzmark, Ph.D.